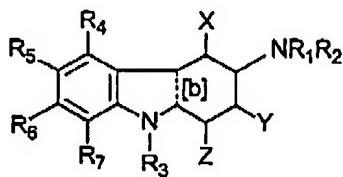


### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of claims:**

1. (Currently amended) A compound of formula I



Formula I

wherein

---[b] is a single or double bond;

Each X, Y, and Z is independently selected from H, -OH, -O-alkyl, and -O-substituted alkyl;

R<sub>1</sub> is selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, and aryl;

R<sub>2</sub> is selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, and aryl;

R<sub>3</sub> is -A-E-R<sub>8</sub>;

A is selected from alkyl and substituted alkyl;

E is selected from -N(R<sub>10</sub>)C(O)-, -C(O)N(R<sub>10</sub>)-, -N(R<sub>10</sub>)C(S)-, -C(S)N(R<sub>10</sub>)-, -S(O)N(R<sub>10</sub>)-, -N(R<sub>10</sub>)S(O)-, -S(O)<sub>2</sub>N(R<sub>10</sub>)-, and -N(R<sub>10</sub>)S(O)<sub>2</sub>-;

Each R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, and R<sub>7</sub> is independently selected from H, halogen, aryl, -CN, -NO<sub>2</sub>, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, -OR<sub>9</sub>, -NH<sub>2</sub>, -C(O)NH<sub>2</sub>, -C(S)NH<sub>2</sub>, and -S(O)<sub>n</sub>aryl, provided that one of R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, and R<sub>7</sub> is -S(O)<sub>n</sub>aryl, and that at least one of R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, and R<sub>7</sub> is H;

n is 0, 1, or 2; and

Each R<sub>8</sub>, R<sub>9</sub>, and R<sub>10</sub> is independently selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, and aryl[();].

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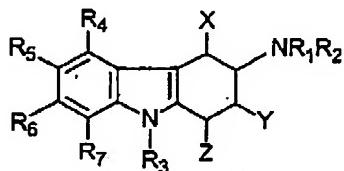
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Each  $R_{14}$  is independently selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocycloalkyl, phenyl, naphthyl, and heteroaromatic, provided that any of the alkyl, cycloalkyl, phenyl, naphthyl, or heteroaromatic is optionally substituted with up to 3 substituents independently selected from halogen, alkyl,  $CF_3$ ,  $OR_{12}$ ,  $SR_{13}$ ,  $CN$ ,  $NO_2$ ,  $N_3$ ,  $N(R_{12})_2$ ,  $C(O)N(R_{12})_2$ , and  $C(S)N(R_{12})_2$ ;

Each  $R_{12}$  is independently selected from H, alkyl, and cycloalkyl, provided that any of the alkyl or cycloalkyl is optionally substituted with up to 2 substituents independently selected from halogen,  $CF_3$ ,  $NO_2$ ,  $NH_2$ ,  $N_3$ ,  $CN$ ,  $OH$ , O-lower alkyl, and O-lower substituted alkyl; and pharmaceutically acceptable salts thereof.

2. (Currently amended) A compound of Claim 1 having the Formula Ib



Formula Ib

wherein

Each X, Y, and Z is independently selected from H, -OH, -O-alkyl, and -O-substituted alkyl;

$R_1$  is selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, and aryl;

$R_2$  is selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, and aryl;

$R_3$  is d-A-E- $R_8$ ;

A is selected from alkyl and substituted alkyl;

E is selected from  $-N(R_{10})C(O)-$ ,  $-C(O)N(R_{10})-$ ,  $-N(R_{10})C(S)-$ ,  $-C(S)N(R_{10})-$ ,  $-S(O)N(R_{10})-$ ,  $-N(R_{10})S(O)-$ ,  $-S(O)_2N(R_{10})-$ , and  $-N(R_{10})S(O)_2-$ ;

Each  $R_4$ ,  $R_5$ ,  $R_6$ , and  $R_7$  is independently selected from H, halogen, aryl,  $-CN$ ,  $-NO_2$ , alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl,  $-OR_9$ ,  $-NH_2$ ,  $-C(O)NH_2$ ,  $-C(S)NH_2$ , and  $-S(O)_n$ aryl, provided that one of  $R_4$ ,  $R_5$ ,  $R_6$ , and  $R_7$  is  $-S(O)_n$ aryl, and that at least one of  $R_4$ ,  $R_5$ ,  $R_6$ , and  $R_7$  is H;

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n is 0, 1, or 2; and

Each R<sub>8</sub>, R<sub>9</sub>, and R<sub>10</sub> is independently selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, and aryl[[;]].

Each R<sub>11</sub> is independently selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocycloalkyl, phenyl, naphthyl, and heteroaromatic, provided that any of the alkyl, cycloalkyl, phenyl, naphthyl, or heteroaromatic is optionally substituted with up to 3 substituents independently selected from halogen, alkyl, CF<sub>3</sub>, OR<sub>42</sub>, SR<sub>42</sub>, CN, NO<sub>2</sub>, N<sub>3</sub>, N(R<sub>12</sub>)<sub>2</sub>, C(O)N(R<sub>12</sub>)<sub>2</sub>, and C(S)N(R<sub>12</sub>)<sub>2</sub>;

Each R<sub>12</sub> is independently selected from H, alkyl, and cycloalkyl, provided that any of the alkyl or cycloalkyl is optionally substituted with up to 2 substituents independently selected from halogen, CF<sub>3</sub>, NO<sub>2</sub>, NH<sub>2</sub>, N<sub>3</sub>, CN, OH, O lower alkyl, and O lower substituted alkyl; and pharmaceutically acceptable salts thereof.

3. (Original) The compound of Claim 2, wherein one of R<sub>1</sub> and R<sub>2</sub> is H, and the other is H, alkyl, or substituted alkyl.

4. (Original) The compound of Claim 3, wherein R<sub>5</sub> is arylS(O)<sub>n</sub>-, and wherein R<sub>4</sub>, R<sub>6</sub>, and R<sub>7</sub> are H.

5. (cancelled)

6. (cancelled)

7. (cancelled)

8. (cancelled)

9. (cancelled)

10. (Original) A pharmaceutical composition comprising a compound according to Claim 2.

11. (cancelled)

12. (cancelled)

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13. (cancelled)

14. (cancelled)

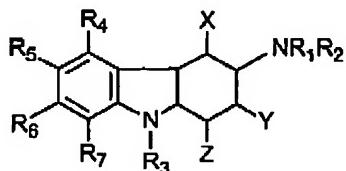
15. (cancelled)

16. (Original) The compound of Claim 2, wherein the compound includes at least one atom selected from Carbon-11, Nitrogen-13, Oxygen-15, and Fluorine-18.

17. (cancelled)

18. (cancelled)

19. A compound of Claim 1 having the Formula Ia



Formula Ia

wherein

Each X, Y, and Z is independently selected from H, -OH, -O-alkyl, and -O-substituted alkyl;

R<sub>1</sub> is selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, and aryl;

R<sub>2</sub> is selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, and aryl;

R<sub>3</sub> is -A-E-R<sub>8</sub>;

A is selected from alkyl and substituted alkyl;

E is selected from -N(R<sub>10</sub>)C(O)-, -C(O)N(R<sub>10</sub>)-, -N(R<sub>10</sub>)C(S)-, -C(S)N(R<sub>10</sub>)-, -S(O)N(R<sub>10</sub>)-, -N(R<sub>10</sub>)S(O)-, -S(O)<sub>2</sub>N(R<sub>10</sub>)-, and -N(R<sub>10</sub>)S(O)<sub>2</sub>-;

Each R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, and R<sub>7</sub> is independently selected from H, halogen, aryl, -CN, -NO<sub>2</sub>, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, -OR<sub>9</sub>, -NH<sub>2</sub>,

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-C(O)NH<sub>2</sub>, -C(S)NH<sub>2</sub>, and -S(O)<sub>n</sub>aryl, provided that one of R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, and R<sub>7</sub> is -S(O)<sub>n</sub>aryl, and that at least one of R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, and R<sub>7</sub> is H;

n is 0, 1, or 2; and

Each R<sub>8</sub>, R<sub>9</sub>, and R<sub>10</sub> is independently selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, and aryl[[;]].

Each R<sub>11</sub> is independently selected from H, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocycloalkyl, phenyl, naphthyl, and heteroaromatic, provided that any of the alkyl, cycloalkyl, phenyl, naphthyl, or heteroaromatic is optionally substituted with up to 3 substituents independently selected from halogen, alkyl, CF<sub>3</sub>, OR<sub>12</sub>, SR<sub>12</sub>, CN, NO<sub>2</sub>, N<sub>3</sub>, N(R<sub>12</sub>)<sub>2</sub>, C(O)N(R<sub>12</sub>)<sub>2</sub>, and C(S)N(R<sub>12</sub>)<sub>2</sub>;

Each R<sub>12</sub> is independently selected from H, alkyl, and cycloalkyl, provided that any of the alkyl or cycloalkyl is optionally substituted with up to 2 substituents independently selected from halogen, CF<sub>3</sub>, NO<sub>2</sub>, NH<sub>2</sub>, N<sub>3</sub>, CN, OH, O lower alkyl, and O lower substituted alkyl; and pharmaceutically acceptable salts thereof.

20. (Original) The compound of Claim 19, wherein one of R<sub>1</sub> and R<sub>2</sub> is H, and the other is H, alkyl, or substituted alkyl.

21. (Original) The compound of Claim 20, wherein R<sub>5</sub> is arylS(O)<sub>n</sub>-, and wherein R<sub>4</sub>, R<sub>6</sub>, and R<sub>7</sub> are H.

22. (Original) The compound of Claim 21, wherein n is 2.

23. (cancelled)

24. (cancelled)

25. (cancelled)

26. (cancelled)

27. (Original) A pharmaceutical composition comprising a compound according to Claim 19.

28. (cancelled)

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29. (cancelled)

30. (cancelled)

31. (cancelled)

32. (cancelled)

33. (Original) The compound of Claim 19, wherein the compound includes at least one atom selected from Carbon-11, Nitrogen-13, Oxygen-15, and Fluorine-18.

34. (cancelled)

35. (cancelled)

36. (cancelled)

37. (cancelled)

38. (cancelled)

39. (cancelled)